1 Identification of the substance or preparation and the supplier

Product Name: d-Limonene
Datasheet Number: 4-0099 1.2.0
Product Part Number: 43E00530
Chemical Name: (R)-p-mentha-1,8-diene
Synonyms: Dipentene
1,8-p-menthadiene
Cyclohexene, 1-methyl-4-(1-methylene)-,(R)-

Irritant Dangerous for the Environment

Name of Supplier: Xerox Ltd.
Address of Supplier: Xerox Environment, Health & Safety - BC1
Bessemer Road
Welwyn Garden City
Herts. AL7 1BU
UK
Telephone: ++44 (0)1707 353434
Fax: ++44 (0)1707 353914
Responsible Person: Manager, Environment, Health and Safety
Emergency Telephone: Not applicable

2 Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Concentration</th>
<th>CAS Number</th>
<th>EC Number</th>
<th>R Phrases</th>
<th>Symbols</th>
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</thead>
<tbody>
<tr>
<td>(R)-p-mentha-1,8-diene</td>
<td>&gt;99.5%</td>
<td>5989-27-5</td>
<td>227-813-5</td>
<td>R10, R38, R43, R50/53</td>
<td>Xi, N</td>
</tr>
</tbody>
</table>

3 Hazards identification

- Contact with eyes: May cause irritation
- Contact with skin: Causes irritation
- Inhalation: May cause irritation
- Ingestion: May cause nausea/vomiting
- May cause sensitisation by skin contact

4 First aid measures

Contact with skin
- Remove contaminated clothing immediately and wipe affected skin with dry cloth. Then wash with soap and water
- Seek medical attention if ill effects occur

Contact with eyes
- If substance has got into eyes, immediately wash out with plenty of water for at least 15 minutes
- Seek medical attention if irritation persists

Date of Last Change 13/06/2005
4 First aid measures (....)

Ingestion
- Do not induce vomiting because of risk of aspiration into the lungs. If aspiration is suspected obtain immediate medical attention
- Give water or milk to drink
- Seek medical attention if ill effects occur

Inhalation
- Remove patient to fresh air
- Seek medical advice if necessary

5 Fire-fighting measures
- Auto-ignition point 236.6 deg C
- Lower explosive limit 0.7 % (in air)
  Upper explosive limit 6.1 % (in air)
- Flammable (R10), Flash point 50° C (CC)
- Products of combustion are carbon dioxide and carbon monoxide
- In case of fire, do not breathe fumes
- In case of fire use foam, carbon dioxide or dry agent
- In the event of an adjacent fire, cool containers with water spray

6 Accidental release measures

Environmental Precautions
- Do not allow to enter public sewers and watercourses

Immediate Actions
- Shut off all ignition sources
- Clean up spills immediately, as residues are slippery

Clean Up Actions
- Ventilate area
- Absorb spillage in suitable inert material
- Remove contaminated material to safe location for subsequent disposal
- Wash spill site with water and detergent

7 Handling and storage

Handling
- Avoid contact with skin (S24)
- Avoid transfer to eyes
- Wash hands after handling

Storage
- Store in packaging supplied, away from heat and sources of ignition
- Keep in a cool, dry, well ventilated place

8 Exposure controls and personal protection

Exposure Limits
- None assigned
8 Exposure controls and personal protection (....)

Exposure controls
- Ensure adequate ventilation

Occupational exposure controls
- Wear suitable gloves
- Avoid transfer to eyes

9 Physical and chemical properties

- Appearance: Colourless to pale straw coloured liquid
- Odour: Fresh citrus odour
- Boiling point: 178°C
- Vapour pressure: 1.4mm Hg mbar at 20°C, Vapour pressure: 2.0mm Hg mbar at 25°C, Vapour pressure at Flash Point: 7.4mm Hg mbar
- Melting point: -74.3°C
- Water solubility <0.2% (20°C)
- Specific gravity 0.837-0.85 g/cm3
- Flammable (R10), Flash point 50°C (CC)
- Auto-ignition point 236.6 deg C
- Lower explosive limit 0.7 % (in air)
  Upper explosive limit 6.1 % (in air)

10 Stability and reactivity

- Stable
- Conditions to avoid: Open flames and high temperatures
- Incompatibility with other materials: Avoid contact with strong oxidising agents

11 Toxicological information

Inhalation
- Possible risk of respiratory irritation from prolonged or repeated inhalation

Contact with skin
- Causes irritation
- May cause sensitisation by skin contact
- LD50 (skin,rabbit) >2000 mg/kg

Contact with eyes
- May cause irritation

Ingestion
- LD50 (oral,rat) >2000 mg/kg
- The ingestion of significant quantities may cause nausea/vomiting

Carcinogenicity
- Not classified as a carcinogen

Mutagenicity
- No evidence of mutagenic effects

Date of Last Change 13/06/2005
12 Ecological information

Ecotoxicity
- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment (R50/53)

Mobility
- Water solubility <0.2 %

Persistence and Biodegradability
- This substance is biodegradable
- Biodegradability: Complete in 28 days

Bioaccumulation Potential
- Bioaccumulation is insignificant

13 Disposal considerations

Classification
- European Waste Code: 07 01 04*

Disposal considerations
- This material and/or its container must be disposed of as hazardous waste
- Do not discharge into drains or the environment, dispose to an authorised waste collection point
- Seek specialist advice

14 Transport information

Proper Shipping Name: Dipentene

<table>
<thead>
<tr>
<th>UN</th>
<th>UN No.: 2052</th>
<th>Hazard Class.: 3</th>
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</thead>
<tbody>
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<td></td>
<td>Packing Group: III</td>
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Road/Rail (ADR/RID)
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<td>ADR Classification code: F1</td>
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Sea (IMDG)
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<tr>
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<td>IMDG EmS: F-E, S-E</td>
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</tbody>
</table>

Air (ICAO/IATA)
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<th>ICAO Hazard Class.: 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICAO Packing Group.: III</td>
<td></td>
</tr>
</tbody>
</table>

15 Regulatory information

Date of Last Change 13/06/2005
15 Regulatory information (....)

Applicable Laws
- This product is covered by The Dangerous Preparations Directive (1999/45/EC) as amended

Risk Phrases
- Flammable (R10)
- Irritating to skin (R38)
- May cause sensitisation by skin contact (R43)
- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment (R50/53)

Safety Phrases
- Keep out of reach of children (S2)
- Avoid contact with skin (S24)
- Wear suitable gloves (S37)
- This material and its container must be disposed of as hazardous waste (S60)
- Avoid release to the environment. Refer to special instructions/Safety data sheets (S61)

16 Other information

(R10: Flammable. R38: Irritating to skin. R43: May cause sensitisation by skin contact. R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.)